



General Certificate of Secondary Education

Science B 4462 / Biology 4411

BLY1 Unit Biology 1

Report on the Examination

2007 examination - January series

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Biology

Foundation Tier BLY1F

General

There were eight questions in the paper. The first six questions appeared only on the Foundation Tier and were targeted at grades E, F and G. The final two questions, termed Standard Demand, were common to both Foundation and Higher Tiers. These were targeted at grades C and D.

Most candidates followed the rubric instructions correctly. There were, however, a few candidates who did not. For example, when asked to state **one** example, or give **one** reason, candidates should not give a list of possible alternatives.

Performance on questions addressing 'How Science Works' was very variable. Centres are reminded that the examination will test both Sections 10 and 11 of the specification.

Question 1 (Low Demand)

In part (a) most candidates obtained at least one mark for mentioning streamlining or the possession of fins. Many gave irrelevant answers connected with breathing or even gills.

The majority of candidates in part (b), were able to make two reasonable observations, but many gave differences in size which were specifically excluded by the question. Candidates should not begin their answers with the word *it*, which in this case could refer to either of the two whales.

Part (c) was well answered, but the most common error was the choice of 'million' rather than 'billion'.

Question 2 (Low Demand)

Most candidates gave correct answers for alcohol, nicotine and cocaine. Many candidates, however, incorrectly chose 'deprives a fetus of oxygen' as the effect of thalidomide.

Question 3 (Low Demand)

It was pleasing to see that the majority of candidates could answer a question on reflex arc set at this level. The most common error was to confuse neurone and receptor.

Question 4 (Low Demand)

In part (a) most candidates used antibiotics correctly, but many candidates confused antibodies with antitoxins. Statins were often given as 'substances counteracting the effect of bacterial poisons'.

Surprisingly in part (b), few candidates were able to give the names of two of the diseases which the MMR vaccination protects against. Less able candidates chose two diseases from the table in part (c).

In part (c) the majority of candidates gained at least one mark by referring to decreased risk, but many did not go on to give a quantitative description. Less able candidates gave descriptions of the effects of the disease.

Most candidates recognised in part (d) that genes are cut out during genetic engineering, but comparatively few knew that enzymes are involved in the process.

Question 5 (Low Demand)

Relatively few candidates knew that the main function of sports drinks is to replace the ions lost during sweating. Many candidates stated that ions gave the athlete energy.

Question 6 (Low Demand)

Part (a) was well answered.

In part (a)(i) most candidates gained one mark by recognising the increase, but many candidates went on to describe a decrease after the year 2000.

The majority of candidates gained marks in part (b)(ii), by referring to lack of exercise and unhealthy diets. Weaker candidates often described the graph rather than suggesting reasons for the shape of the curve.

Most candidates answered part (c)(i) correctly and many went on to give a reasonable estimate in part (c)(ii). Comparatively few realised that the data showed that in many people CHD is related to two or more factors.

Question 7 (Standard Demand)

For part (a) many candidates answered in terms of oxygen and/or human breathing. A common idea was that a tree suddenly releases stored carbon dioxide when it is chopped down.

Biodiversity is new to this specification which perhaps explains why many candidates did not attempt part (b)(i) while others merely repeated the question.

A majority of candidates answered part (b)(ii) correctly, in terms of the food chain effects. Fewer referred to the potential loss of useful products such as drugs. Less able candidates frequently answered in terms of human food supplies.

Question 8 (Standard Demand)

Part (a)(i) was well answered. In part (a)(ii) many candidates gave the answer 6000, ignoring the fact that there were two transects in each wood.

Part (b) was well answered.

Question part (c)(i) was well answered, but in part (c)(ii) many candidates ignored the information that each squirrel makes and defends one larder, answering in terms of squirrels sharing larders.

In part (d)(i) many candidates gave a single figure answer rather than a range.

Many candidates, in effect in part (d)(ii), repeated the questions by stating that there were more squirrels, or more larders, or that squirrels prefer blue spruce woods.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results Statistics](#) page of the AQA Website.

Biology

Higher Tier BLY1H

General

There were eight questions in the paper. The first two questions, termed Standard Demand, were common to both Foundation and Higher Tiers. These were targeted at grades C and D. Questions three and four were also targeted at grades C and D. The final four questions, termed High Demand, were targeted at grades B to A*.

Most candidates followed the rubric instructions correctly. There were, however, a few candidates who did not. For example, when asked to state **one** example, or give **one** reason, candidates should not give a list of possible alternatives.

Performance on questions addressing 'How Science Works' was very variable. Centres are reminded that the examination will test both Sections 10 and 11 of the specification.

Question 1 (Standard Demand)

Almost all candidates gave correct answers in part (a)(i), but many gave the answer 6000 in part (a)(ii), ignoring the fact that there were two transects in each wood.

Part (b) was well answered.

Part (c)(i) was well answered, but in part (c)(ii) many candidates ignored the information that each squirrel makes and defends one larder, answering in terms of squirrels sharing larders.

In part (d)(i) some candidates gave a single figure answer rather than a range.

While in part (d)(ii) there were candidates who, in effect, repeated the questions by stating that there were more squirrels, or more larders, or that squirrels prefer blue spruce woods.

Question 2 (Standard Demand)

There were many excellent answers to part (a), but some candidates are under the impression that a tree suddenly releases stored carbon dioxide when it is chopped down.

Biodiversity is new to this specification and many candidates merely repeated the question in part (b)(i).

A majority of candidates answered part (b)(ii), correctly, in terms of food chain effects. Fewer referred to the potential loss of useful products such as drugs. Less able candidates frequently answered in terms of human food supplies.

Question 3 (High Demand)

The more able candidates gave excellent answers to part (a). Less able candidates showed a lack of understanding of the physiology of the fetus, answering in terms of the fetus breathing tar or smoke. There were frequent references to the fetus being poisoned, or born addicted to nicotine or being born with asthma.

Candidates should understand that, in the type of question in part (b), credit is given only for information from the list. Other statements are regarded as neutral by examiners.

In part (b)(i) able candidates usually gained two marks, but less able candidates frequently gave tar content or the effect on blood pressure.

Part (b)(ii) produced more correct answers than part (b)(i), but less able candidates frequently gave the effects on the heart.

Question 4 (High Demand)

All three parts of part (a) were answered well.

Able candidates usually gained both marks for part (b). Weaker candidates frequently gave general answers which merely repeated the question such as 'It keeps you fit', 'It keeps your body healthy', 'It gives you big muscles'.

Question 5 (High Demand)

In part (a) most candidates appreciated that MRSA is resistant to most antibiotics, but many struggled to gain a second mark. The most frequent acceptable answers were in terms of contagion or the weak immune response of patients who were already suffering from another condition.

Part (b)(i) was generally answered well.

Most candidates gained one mark in part (b)(ii), by stating that doctors should wash their hands between seeing patients, but most struggled to gain the second mark which required them to link hand washing to reduced transfer of bacteria. Less able candidates repeated their answer to part (b)(i) and answered in terms of dead bodies or midwives.

Question 6 (High Demand)

In part (a) able candidates usually gained both marks, but less able candidates often ignored the drawings and answered in terms of bright colours, poisons or even prickles.

Most candidates gained two marks in part (b) by answering in terms of surviving to breed, but only the more able candidates answered in terms of mutation or variation to gain the third mark.

Question 7 (High Demand)

Most candidates recognised in part (a) that the two embryos would have identical genetic information. Fewer went on to explain why in terms of asexual reproduction.

Full marks were common in part (b), with most candidates appreciating that sexual reproduction involves mixing of genetic material.

In part (c) almost all candidates gained a mark by referring to religious, moral or ethical considerations.

Question 8 (High Demand)

In part (a) able candidates usually obtained full marks, but weaker candidates frequently confused FSH, LH and oestrogen. Candidates should appreciate that FSH stimulates egg maturation whereas LH stimulates egg release.

Part (b) required candidates to evaluate a research programme. In this type of question, candidates should consider evidence for and against, and then draw a conclusion. Less able candidates usually managed to describe two cons, but ignored the pros. Able candidates often described three cons and one pro, but very few candidates came to a conclusion in order to gain the fifth mark.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results Statistics](#) page of the AQA Website.